

REMARKS/ARGUMENTS

Favorable reconsideration of this application is respectfully requested in view of the claim amendments and following remarks. Claims 4, 20-23 and 26 have been amended. Claims 5-8, 10, 12-13, and 24-25 are cancelled without prejudice or disclaimer of the subject matter presented therein. Currently, claims 1-4, 9, 11, 14-23, and 26-28 are pending in the present application of which claims 1, 11, and 26 are independent. No new matter has been added.

Claims 1-5, 9, 11, 12, and 14-28 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Komiya (U.S. Patent Number 4,798,397) in view of Layman (U.S. Patent Number 1,380,659), both of record. Claims 1-5, 9, 11, 12, and 14-28 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Seksaria (U.S. Patent Application Number 2004/0075234A1) in view of Layman (U.S. Patent Number 1,380,659), both of record. The above rejections are respectfully traversed for at least the reasons set forth below. Claims 21, 23, and 25 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. The Examiner argues that there is insufficient antecedent basis for the phrase "fully returned flanges." Claims 8-10 were objected to on the ground that characterization of a welded joint as "high quality" is indefinite.

The Applicant, through his representative, thanks Examiner Eric Culbreth for granting the courtesy of an interview on September 16, 2008.

Objection to the Drawings

The Examiner objected to the drawings on the grounds that the discontinuity recited in Claims 20-23 is not shown. Drawing 6 has been amended to show discontinuities 21a and 21b. The specification has been amended to reference discontinuities 21a and 21b.

Claim Rejection Under 35 U.S.C. §112

Claims 20-24 were rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, Claims 20-24 were rejected because they made reference to “fully returned flanges,” a phrase deemed by the Examiner to have insufficient antecedent basis. Claims 20-23 have been amended to replace the phrase “fully returned flanges” with “fully returned segments” which has antecedent basis in the claims. The cancellation of Claim 24 renders this rejection moot. The Examiner is therefore respectfully requested to withdraw the rejection of Claims 20-23.

Claim Rejection Under 35 U.S.C. §103

Claim 1 was rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Komiya or Seksaria in view of Layman. This rejection is respectfully traversed because Komiya, Seksaria, and Layman, considered singly or in combination, fail to teach or suggest the claimed invention as set forth in claim 1 and its dependents.

Komiya discloses a vehicular suspension arm having a metal component with a structural I-beam section. As noted by the Examiner, Komiya fails to disclose a vehicular suspension arm formed from stamped components.

Seksaria discloses a vehicular suspension arm having an aluminum metal component with a structural I-beam section. As noted by the Examiner, Seksaria fails to disclose a vehicular suspension arm formed from stamped components.

Layman discloses a general link or lever or the like, and is not related to automobile suspensions. Layman describes a general approach and illustrates approximately 10 different cross sections with no specific description or teaching of a stamping approach or of a joining method. No joint detail is provided. The illustrations of Layman illustrate the range of shapes that might be able to be constructed using his stamped approach. There is no indication that any of these various shapes were actually constructed.

Claim 1, as amended, recites a vehicular suspension arm, comprising an upper sheet metal stamped component with a first outer face and a first inner face, and comprising a first central web portion with two opposite sides and first upstanding flange portions at said opposite sides of said first web portion; and a lower sheet metal stamped component with a second outer face and a second inner face, and comprising a second central web portion with two opposite sides and second upstanding flange portions at said opposite sides of said second web portion. The upper stamped component and lower stamped component are configured when placed into contact along said first and second inner faces to create a "gap" along a peripheral, joining edge. This gap facilitates a welded joint which combines both butt and fillet configurations to join four

material surfaces of the upper and lower components, and said upper and lower components are rigidly attached to each other by means of said welded joint.

The Official Action asserts that Komiya and Seksaria each disclose all the elements of claim 1 except for formation of the I-beam from stamped components. The Official Action asserts that Layman teaches a link formed from stamped components. However, the Applicants submit that neither Komiya, Seksaria nor Layman teaches or suggests a welded joint which combines both butt and fillet configurations to join four material surfaces. Komiya and Seksaria fail to disclose welding to create an I-beam since the I-beam disclosed therein is a single solid structural element. As discussed during the Examiner's Interview, Layman fails to teach a welded joint which combines both butt and fillet configurations to join four material surfaces of the upper and lower components; the method taught by Layman uses welding, particularly spot welding, in conjunction with brazing (See page 1, lines 49-51, 105-108). The welding method recited in Claim 1 of the current application utilizes a gap between upper and lower trim edges of the stamped components to deposit a weld along the periphery of the structure (See Page 8, lines 16-30). Spot welding as described by Layman produces a weld joining the faces of two surfaces at one point, rather than a weld along edge surfaces. Layman fails to disclose the presence of any gap between upper and lower edges of his stamped components, or any means of depositing a weld along such a gap. Layman neither teaches nor suggests a welded joint which combines both butt and fillet configurations, nor a method of making the same.

Although they disclose vehicular suspension arms, neither Komiya nor Seksaria provides any teaching or suggestion that a vehicular suspension arm having a metal component with a structural I-beam section may be formed from stamped members.

Accordingly, there is no motivation within the cited references that would lead one of ordinary skill in the art to combine the references in the manner suggested by the examiner so as to obtain a vehicle suspension arm formed from stamped metal components joined with a welded joint which combines both butt and fillet configurations to join four material surfaces of the upper and lower components, as recited in Claim 1.

At least by virtue of Komiya's, Seksaria's and Layman's failure to teach or suggest the above identified element of claim 1, a *prima facie* case of obviousness has not been established under 35 U.S.C. § 103. Accordingly, the Examiner is respectfully requested to withdraw the rejection of claim 1. Claims 2, 3, 4, 14, 15, 16, 17, 20, and 21 depend, directly or indirectly, from allowable claim 1 and are also allowable over either Komiya or Seksaria in view of Layman at least by virtue of their dependencies.

Claim 11 was rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Komiya or Seksaria in view of Layman. This rejection is respectfully traversed because Komiya and Layman, considered singly or in combination, fail to teach or suggest the claimed invention as set forth in amended claim 1 and its dependents.

Komiya discloses a vehicular suspension arm having a metal component with a structural I-beam section. As noted by the Examiner, Komiya fails to disclose a vehicular suspension arm formed from stamped components.

Seksaria discloses a vehicular suspension arm having an aluminum metal component with a structural I-beam section. As noted by the Examiner, Seksaria fails to disclose a vehicular suspension arm formed from stamped components.

Layman discloses a general link or lever or the like, and is not related to automobile suspensions. Layman describes a general approach and illustrates approximately 10 different cross sections with no specific description or teaching of a stamping approach or of a joining method. No joint detail is provided. The illustrations of Layman illustrate the range of shapes that might be able to be constructed using his stamped approach. There is no indication that any of these various shapes were actually constructed.

Claim 11, as amended, recites a vehicular suspension arm, comprising an upper sheet metal stamped component with a first outer face and a first inner face, and comprising a first central web portion with two opposite sides and first upstanding flange portions at said opposite sides of said first web portion; and a lower sheet metal stamped component with a second outer face and a second inner face, and comprising a second central web portion with two opposite sides and second upstanding flange portions at said opposite sides of said second web portion. The upper stamped component and lower stamped component are rigidly attached to each other along said first and second inner faces in a back-to-back configuration using projection welding across the respective first and second web portions.

The Official Action asserts that Komiya and Seksaria each disclose all the elements of claim 11 except for formation of the I-beam from stamped components. The Official Action asserts that Layman teaches a link formed from two stamped components. However, the

Applicants submit that neither Komiya, Seksaria nor Layman teaches or suggests projection welding to attach the stamped components. Projection welding is a resistance welding process which produces coalescence of metals with the heat obtained from resistance to electrical current through the work parts, where the work parts are held together under pressure by electrodes. Projections are designed in one part in projection welding. These act as current concentrators for the welding process. Projection welding rigidly attaches components to each other in a face-to-face configuration. Komiya and Seksaria fail to disclose projection welding since the I-beams disclosed therein are a single solid structural element. Layman teaches away from use of projection welding to firmly bond two parts to form an I-beam; the method taught by Layman uses welding, particularly spot welding, in conjunction with brazing (See page 1, lines 49-51, 105-108):

In practice I prefer to spot-weld these parts to hold them together, and then to braze them, preferably by immersion in the spelter.

Layman, page 1, lines 105-108.

Spot welding only produces a single weld at a time, in contrast to projection welding, which allows production of several welds produced simultaneously, the number of welds depending on the number of projections in the component. The current process allows formation of a firm bond using a single welding step, without requiring a subsequent brazing step. Additionally, brazing, as taught by Layman, is substantially weaker than projection welding, as recited in Claim 11 of the current application. This is because welding is done by melting the workpieces and adding a filler material to form a pool of molten material (the weld puddle) that cools to become a strong joint. Brazing, on the other hand, involves melting a lower-melting-point

material between the workpieces to form a bond between them, without melting the workpieces. Common brazings are weaker than the materials they join.

Additionally, Layman fails to teach a vehicular suspension arm including an upper sheet metal stamped component and a lower sheet metal stamped component, as specified in Claim 11 of the current application. As noted above with regard to Claim 1, Layman discloses an undefined link, lever and the like, and is not related to automobile suspensions. As previously noted with regard to Claim 1, Layman describes a general approach and illustrates approximately 10 different cross sections with no specific description or teaching of a stamping approach or of a joining method. No joint detail is provided.

The Examiner asserts that Layman teaches a link formed from two stamped components. However, the Applicant submits that Layman fails to teach or suggest a vehicle suspension arm formed from stamped components joined together by projection welding. Layman discloses an undefined link, lever and the like. Layman provides no teaching or suggestion that his stamped lever could be used to replace an I-beam in a suspension system.

Although they disclose vehicular suspension arms, neither Komiya nor Seksaria provides any teaching or suggestion that a vehicular suspension arm having a metal component with a structural I-beam section may be formed from stamped members, and hence fail to make up for the deficiency in Layman.

Accordingly, there is no motivation within the cited references that would lead one of ordinary skill in the art to combine the references in the manner suggested by the examiner so as

to obtain a vehicle suspension arm formed from stamped metal components , as recited in Claim 11.

At least by virtue of Komiya's, Seksariya's, and Layman's failure to teach or suggest the above identified elements of claim 11, a *prima facie* case of obviousness has not been established under 35 U.S.C. § 103. Accordingly, the Examiner is respectfully requested to withdraw the rejection of claim 11. Claims 4, 17, 18, 22, and 27 depend, directly or indirectly, from allowable claim 11 and are also allowable over Komiya or Seksaria in view of Layman at least by virtue of their dependencies.

Claim 26 was rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Komiya or Seksaria in view of Layman. This rejection is respectfully traversed because Komiya, Seksariya, and Layman, considered singly or in combination, fail to teach or suggest the claimed invention as set forth in amended claim 26 and its dependents.

Komiya discloses a vehicular suspension arm having a metal component with a structural I-beam section. As noted by the Examiner, Komiya fails to disclose a vehicular suspension arm formed from stamped components.

Seksaria discloses a vehicular suspension arm having an aluminum metal component with a structural I-beam section. As noted by the Examiner, Seksaria fails to disclose a vehicular suspension arm formed from stamped components.

Layman discloses a general link, lever, or the like; the only specifically disclosed use is as a brake rocker shaft formed from sheet metal components having flanges. A rocker shaft is used to rock camshafts in an engine.

Claim 26, as amended, recites a suspension system, comprising at least one vehicular suspension arm including an upper sheet metal stamped component with a first outer face and a first inner face, and comprising a first central web portion with two opposite sides and first upstanding flange portions at said opposite sides of said first web portion; and a lower sheet metal stamped component with a second outer face and a second inner face, and comprising a second central web portion with two opposite sides and second upstanding flange portions at said opposite sides of said second web portion. The first and second inner faces are adapted to contact each other along a substantial portion of said first and second web portions. The upper and lower stamped components are rigidly attached to each other to create a structural I-beam section, wherein the thickness of each upstanding flange portion is at least equal to the combined thickness of the first and second web portions. The upper and lower components are rigidly attached to each other by means of a welded joint which combines both butt and fillet configurations to join four material surfaces of the upper and lower components.

The Official Action asserts that Komiya and Seksaria each disclose all the elements of claim 26 except for formation of the I-beam from stamped components. The Official Action asserts that Layman teaches a link formed from stamped components. However, the Applicants submit that neither Komiya, Seksaria nor Layman teaches or suggests a welded joint which combines both butt and fillet configurations to join four material surfaces, as recited in Claim 26. Komiya and Seksaria fail to disclose welding to create an I-beam since the I-beam disclosed therein is a single solid structural element. As discussed during the Examiner's Interview, Layman fails to teach a welded joint which combines both butt and fillet configurations to join

four material surfaces; the method taught by Layman uses welding, particularly spot welding, in conjunction with brazing (See page 1, lines 49-51, 105-108). Layman neither teaches nor suggests a welded joint which combines both butt and fillet configurations, nor a method of making the same.

Although they disclose vehicular suspension arms, neither Komiya nor Seksaria provides any teaching or suggestion that a vehicular suspension arm having a metal component with a structural I-beam section may be formed from stamped members.

Accordingly, there is no motivation within the cited references that would lead one of ordinary skill in the art to combine the references in the manner suggested by the examiner so as to obtain a vehicle suspension arm formed from stamped metal components joined with a welded joint which combines both butt and fillet configurations to join four material surfaces of the upper and lower components, as recited in Claim 26. Accordingly, the Examiner is respectfully requested to withdraw the rejection of claim 26. Claims 9, 19, 23, and 28 depend, directly or indirectly, from allowable claim 26 and are also allowable over Komiya or Seksaria in view of Layman at least by virtue of their dependencies.


CONCLUSION

While we believe that the instant amendment places the application in condition for allowance, should the Examiner have any further comments or suggestions, it is respectfully requested that the Examiner telephone the undersigned attorney in order to expeditiously resolve any outstanding issues.

In the event that the fees submitted prove to be insufficient in connection with the filing of this paper, please charge our Deposit Account Number 50-0578 and please credit any excess fees to such Deposit Account.

Respectfully submitted,
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